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Research Article

Significant records of plants, algae, fungi, and animals in SE Europe and adjacent regions, 2

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Abstract

In this paper, we present two significant records of mosses in Slovenia: *Bryum canariense* and *Fissidens fontanus*, and the first record of an animal species, *Porcellio obsoletus*, from the Slovene Coast.

Keywords

Bryum canariense; *Fissidens fontanus*; *Porcellio obsoletus*; bryophytes; mosses, Bryophyta; flora; fauna; Isopoda; isopods; Slovenia

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Citation: Jakob, A., Kuhar, U., Vittori, M., Klenovšek, T., Strgulc Krajšek, S. (2024). Significant records of plants, algae, fungi, and animals in SE Europe and adjacent regions 2. Acta Biologica Slovenica, 67 (2)

https://doi.org/ 10.14720/abs.67.2.19618

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Bryum canariense Brid., fam. Bryaceae (moss)

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Leg.	Aljaž Jakob
Country	Slovenia
Statement of significance	The first recent record of a data deficient species in Slovenia.
Locality description	Primorska region, Classical Karst, Lipica, 390 m a. s. l.
Habitat	*Quercus pubescens* forest with admixed *Pinus nigra*, on the forest floor under *Juniperus communis*
Date of observation	2024-03-25
GPS	N 45.66687°, E 13.86696°
Voucher	Author's personal herbarium, 203888293

Bryum canariense is a data deficient species of Slovenian flora, previously only collected and reported in 1882 from Orleška draga (Martinčič, 2024). The New site lies 4 km southeast of the historical site at Orleška Draga in similar vegetation type (thermophilous *Quercus pubescens* forests with admixture of *Pinus nigra* in rather early stages of succession).

B. canariense is a Mediterranean-Atlantic species (Hill et al., 2007), occurring in Europe from Great Britain in the north to the Mediterranean basin and Madeira in the South and from the Azores to Turkey. It is absent from some Mediterranean islands. In the immediate vicinity of the presented locality, it grows in Friuli-Venezia Giulia (Italy) and Croatia but is absent from Austria and Hungary. Its conservation status is least concern in Europe (Hogetts & Lockhart, 2020).

The abandonment of land use from the late 19th century to the present is unfavourable for this moss. Previously, the area was predominantly a stony, open grassland and current reforestation (Kaligarič & Ivajnšič, 2014) of the area is likely reducing the habitats suitable for this heliophilic species of open spaces (Hill et al., 2007).

B. canariense differs from all other species of Bryaceae by its arrangement of leaves into 2–3 comal tufts, where each year's rosette is placed above the last year's rosette. Some other rosulate species are similar, but all lack this arrangement, for example, the species of *Rhodobryum* have stolons, so tufts are not arranged above each other. *Ptychostomum capillare* and *P. torquescens* are smaller and lack a serrate border of the leaf tip, and the dry leaves of *P. capillare* are often strongly spirally twisted (erect at *B. canariense*). The leaves of both *Ptychostomum* species have a stronger border up to the leaf tip, sometimes with small teeth, whereas *B. canariense* has a weak border that usually disappears in the upper quarter of the leaf, where it is replaced by strong teeth (Casas et al., 2006; Holyoak, 2013).

Funding

This research was funded by the Slovenian Research and Innovation Agency, grant numbers MR-55879 and P1-0236.

Fissidens fontanus (P. Karst.) Bas, fam. Fissidentaceae (moss)

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Statement of significance	The second and third known localities in Slovenia, the first two in Central Slovenia.
Locality description	(1) Central Slovenia, Ljubljana, Moste, Ljubljanica river, between the bridge of Grablovičeva street and the pedestrian bridge connecting Zaloška street and street Ob Ljubljanici, 300 m a.s.l. (2) Central Slovenia, Ljubljana, water channel Gruberjev prekop, between the bridge of Kajuhova street and the pedestrian bridge Mekinčeva brv, 300 m a.s.l.
Habitat	Submersed in the water on a rock substrate
Date of observation	2022-07-25
GPS	(1) N 46.055172, E 14.533501 (approximate coordinates) (2) N 46.051042, E 14.540049 (approximate coordinates)
Voucher	Herbarium LJU (s.n.)

Fissidens fontanus is an aquatic moss species growing on submerged rocks or wood in mesotrophic lowland lakes and rivers (Frey et al., 2006). It has remote and narrow leaves, which are much longer than the leaves of other representatives of the genus. The upper one-layered part of the leaf is up to 3 times as long as the sheating part, the leaf is unbordered, and the costa ends before the apex (Frey et al., 2006; Godfrey, 2010).

F. fontanus is an European temperate species (Hill & Preston, 1998), distributed from the Mediterranean to S. Scandinavia (Frey et al., 2006). It is also present in North America and in the Southern Hemisphere (Hill & Preston, 1998). The species is considered least concern (LC) in the European Red List (Hodgetts et al., 2019). It is present in all neighbouring countries of Slovenia except Hungary (Hodgetts & Lochhart, 2020; Aleffi et al., 2020; Alegro et al., 2019). In Slovenia, it has been only reported for the sub-Pannonial phytogeographical region, where it was found in 2018 in river Dravinja near Makole by Martinčič (Martinčič, 2024), so our records are the first in the pre-Alpine phytogeographical region of Slovenia.

The specimens in the river Ljubljanica and the channel Gruberjev prekop were found during the monitoring of macrophytes for the assessment of the ecological status of surface waters. Macrophytes were sampled in 100 m long river stretch by wading across the channel or from the shore or from the boat when wading is not possible.

Funding

Slovenian Environment Agency financially supported the monitoring of macrophytes.

Porcellio obsoletus Budde-Lund, 1885, fam. Porcellionidae (animal)

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Country	Slovenia
Statement of significance	This is the first record of *Porcellio obsoletus* in Slovenia.
Locality description	Primorska region, Piran, Trubarjeva ulica, 10 m a. s. l.
Habitat	street with stone pavement
Date of observation	2019-06-14
GPS	N 45.529361°, E 13.567500°
Voucher	The specimen is kept in the isopod collection of Miloš Vittori, University of Ljubljana, Biotechnical Faculty, Department of Biology, Večna pot 111, 1000 Ljubljana, Slovenia.

This is the first report of the occurrence of *Porcellio obsoletus* Budde-Lund, 1885 in Slovenia. The species was observed in a synanthropic habitat on the Slovenian coast.

A single adult *P. obsoletus* female was spotted at night in a narrow street in the town of Piran in June 2019. The individual was collected and preserved in 96% ethanol. The species can be recognized by its weakly granulated tergites (Figure 1a), the position of the glandular pore fields on the anterior edges of pereon epimera (Figure 1b), a furrow running along articles four and five of the second antenna (Figure 1c), and broad, flat uropod exopodites (Strouhal, 1968).

P. obsoletus is distributed in the central and eastern Mediterranean region, Iran, and the Crimea (Schmalfuss, 2003). In the territory of former Yugoslavia, it has previously been reported from Bosnia and Herzegovina as well as from the Croatian coast and islands (Dollfus, 1895; Rogenhofer, 1908; Potočnik, 1989). It has not yet been reported this far north in the Adriatic region. Given the proximity of its known distribution area, there is no reason to assume that its presence in Slovenia is due to human introduction. Previously, six species of *Porcellio* were known to occur in Slovenia (Vittori et al., 2023), making *P. obsoletus* the seventh recorded species of the genus and raising the total number of known Oniscidea species in the country to 75.

Acknowledgement

This work was supported by University Infrastructural Centre “Microscopy of Biological Samples” at the Biotechnical Faculty, University of Ljubljana.

Funding

This research received no external funding.

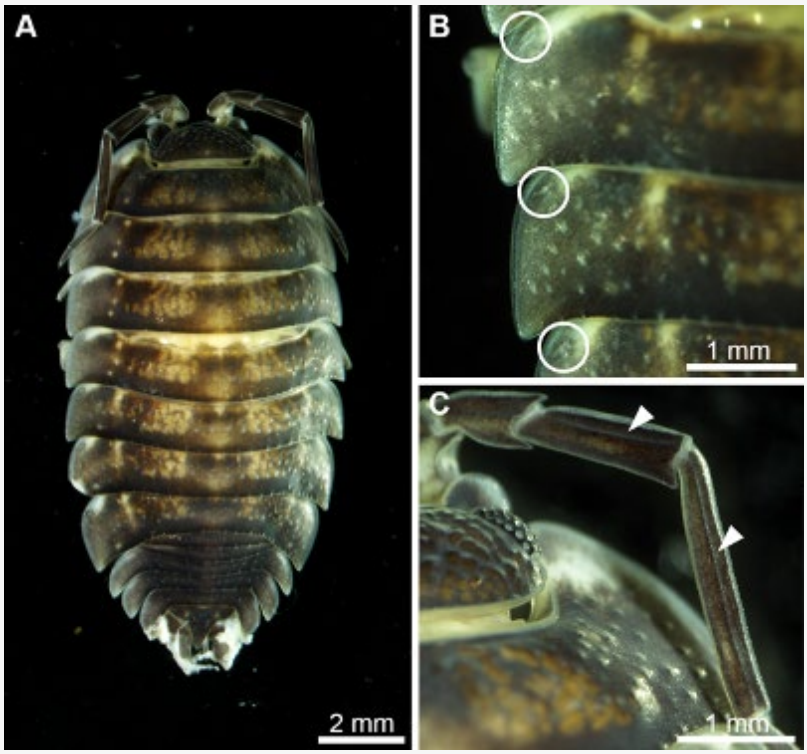


Figure 1. *Porcellio obsoletus*, female, collected in Piran. A: Habitus. B: Position of glandular pore fields (circled). C: Second antenna with a furrow (arrowheads).

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